

CLAIMS

1. A multi-speed transmission comprising:

an input shaft;

an output shaft;

first, second and third planetary gear sets each having first, second and
5 third members;

said input shaft being continuously interconnected with a member of said
planetary gear sets, and said output shaft being continuously interconnected with
another member of said planetary gear sets;

a first interconnecting member continuously interconnecting said first
10 member of said first planetary gear set with said first member of said second planetary
gear set;

a second interconnecting member continuously interconnecting said
second member of said first planetary gear set with said second member of said second
planetary gear set;

15 a third interconnecting member continuously interconnecting said third
member of said second planetary gear set with said first member of said third planetary
gear set;

a first torque-transmitting mechanism selectively interconnecting a
member of said first planetary gear set with a member of said third planetary gear set;

20 a second torque-transmitting mechanism selectively interconnecting a
member of said second planetary gear set with a member of said third planetary gear
set;

a third torque-transmitting mechanism selectively interconnecting a
member of said first, second or third planetary gear set with another member of said
25 first, second or third planetary gear set;

a fourth torque-transmitting mechanism selectively interconnecting a
member of said first or second planetary gear set with a stationary member;

a fifth torque-transmitting mechanism selectively interconnecting a member of said second or third planetary gear set with said stationary member;

30 a sixth torque-transmitting mechanism selectively interconnecting a member of said second planetary gear set with another member of said first, second or third planetary gear set, or with said stationary member;

a seventh torque-transmitting mechanism selectively interconnecting a member of said first, second or third planetary gear set with another member of said
35 first, second or third planetary gear set, or with said stationary member; and

said torque-transmitting mechanisms being engaged in combinations of two to establish at least eight forward speed ratios and at least one reverse speed ratio between said input shaft and said output shaft.

2. The transmission defined in claim 1, wherein said first, second and third torque-transmitting mechanisms comprise clutches, and said fourth, fifth, sixth and seventh torque-transmitting mechanisms comprise brakes.

3. The transmission defined in claim 1, wherein said first, second, third and sixth torque-transmitting mechanisms comprise clutches, and said fourth, fifth and seventh torque-transmitting mechanisms comprise brakes.

4. The transmission defined in claim 1, wherein said first, second, third and seventh torque-transmitting mechanisms comprise clutches, and said fourth, fifth and sixth torque-transmitting mechanisms comprise brakes.

5. The transmission defined in claim 1, wherein said first, second, third, sixth and seventh torque-transmitting mechanisms comprise clutches, and said fourth and fifth torque-transmitting mechanisms comprise brakes.

6. The transmission defined in claim 1, wherein planet carrier assembly members of each of said planetary gear sets are single-pinion carriers.

7. The transmission defined in claim 1, wherein at least one planet carrier assembly member of said planetary gear sets is a double-pinion carrier.

8. A multi-speed transmission comprising:

an input shaft;

an output shaft;

5 a planetary gear arrangement having first, second and third planetary gear sets, each planetary gear set having first, second and third members; said input shaft being continuously interconnected with a member of said planetary gear sets, and said output shaft being continuously interconnected with another member of said planetary gear sets;

10 a first interconnecting member continuously interconnecting said first member of said first planetary gear set with said first member of said second planetary gear set;

a second interconnecting member continuously interconnecting said second member of said first planetary gear set with said second member of said second planetary gear set;

15 a third interconnecting member continuously interconnecting said third member of said second planetary gear set with said first member of said third planetary gear set; and

20 seven torque-transmitting mechanisms for selectively interconnecting said members of said planetary gear sets with a stationary member or with other members of said planetary gear sets for common rotation, said seven torque-transmitting mechanisms being engaged in combinations of two to establish at least

eight forward speed ratios and at least one reverse speed ratio between said input shaft and said output shaft.

9. The transmission defined in claim 8, wherein a first of said seven torque-transmitting mechanisms is operable for selectively interconnecting a member of said first planetary gear set with a member of said third planetary gear set.

10. The transmission defined in claim 8, wherein a second of said seven torque-transmitting mechanisms is operable for selectively interconnecting a member of said second planetary gear set with a member of said third planetary gear set.

11. The transmission defined in claim 8, wherein a third of said seven torque-transmitting mechanisms is selectively operable for interconnecting a member of said first, second or third planetary gear set with another member of said first, second or third planetary gear set.

12. The transmission defined in claim 8, wherein a fourth of said seven torque-transmitting mechanisms is selectively operable for interconnecting a member of said first or second planetary gear set with said stationary member.

13. The transmission defined in claim 8, wherein a fifth of said seven torque-transmitting mechanisms is selectively operable for interconnecting a member of said second or third planetary gear set with said stationary member.

14. The transmission defined in claim 8, wherein a sixth of said seven torque-transmitting mechanisms selectively interconnects a member of said second

planetary gear set with another member of said first, second or third planetary gear set or with said stationary member.

15. The transmission defined in claim 8, wherein a seventh of said seven torque-transmitting mechanisms selectively interconnects a member of said first, second or third planetary gear set with another member of said first, second or third planetary gear set or with said stationary member.

16. The transmission defined in claim 8, wherein planet carrier assembly members of each of said planetary gear sets are single-pinion carriers.

17. The transmission defined in claim 8, wherein at least one planet carrier assembly member of said planetary gear sets is a double-pinion carrier.

18. The transmission defined in claim 8, wherein at least nine forward speed ratios and a reverse speed ratio are established.